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EXAMINER	
MOE, AUNG SOE	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/716,309	STEINBERG ET AL.	
	Examiner	Art Unit	
	Aung S. Moe	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-8,11-13,15,16,18-22 and 26-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-6,13,16,18-21 and 28-31* is/are rejected.

7)☐ Claim(s) *7,8,11,12,15,22,26 and 27* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 2-8, 11-13, 15-16, 18-22, and 26-31 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 6 and 15-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is noted that claim 6 is dependent upon the cancel claim 1, thus, claim 6 is being considered indefinite.

However, for examining the case, the Examiner will assume that claim 6 is dependent upon the new claim 28.

In claim 15, it is unclear how "a final flash energy" recited in line 15 relate to "a final flash energy" as recited in claim 29, line 11 of step (d)? If there are the same "final flash

energy", the Examiner suggests to change "a final flash energy" recited in lines 15 to - - said final flash energy - -.

In claim 16, it is unclear how "a final flash energy" recited in lines 2 and 5 relate to "a final flash energy" as recited in claim 29, line 11 of step (d)? If there are the same "final flash energy", the Examiner suggests to change "a final flash energy" recited in lines 2 and 5 to - - said final flash energy - -.

Claim 16 recites the limitation "said second degree of exposure" in lines 2. There is insufficient antecedent basis for this limitation in the claim.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 2-8, 11-13, 15-16, and 28-31 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4 of U.S. Patent No. 6,151,073.

Although the conflicting claims are not identical, they are not patentably distinct from each other because both claims 1-4 of U.S. Patent No. 6,151,073 and claims 28-31 of the instant application recite the same invention of a flash apparatus means operable each time a flash picture is taken with a digital camera for performing the steps of: (a) activating (means for activating) a flash . . ., (b) grabbing an image (means for grabbing) . . . , (c) analyzing the image intensity (means for analyzing). . . , (d) calculating a subsequent flash . . . , (e) repeating steps (a) through (d) until . . . (i.e. means for repeating), (f) activating (i.e., means for activating) a flash at the determined acceptable final flash energy; wherein the flash apparatus performs the above-mentioned steps each time the camera takes a flash picture as recited in claims 1-4 of Pat. '073 and claims 28-31 of the instant claimed invention.

Furthermore, it is noted that claims 2-4 of Pat. '073 silent for **"automatically"** operating and performing the respective steps each time the flash picture is taken as recited in claims 28-31 of instant application. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to integrate "automatic" flash operation means for "automatically" activating the flash operation steps, since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art.

In view of the above, since claims 2-8, 11-13, 15-16, and 28-31 are encompassed by claims 1-4 of U.S. Pat. '073, allowing this would result in an unjustified or improper timewise extension of the "right to exclude" granted by a patent.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (U.S. 5,218,397) in view of Koshiishi (U.S. 5,229,856).

Regarding claim 31, Takagi '397 discloses a flash apparatus (Figs. 2A-2B & 3, the element 101 and 11) an operable each time a flash picture is taken with a camera (i.e., noted the camera 1), the apparatus comprising:

a) means for activating a flash (11) with a first energy lower than the energy normally required for an acceptable final flash energy level (i.e., noted the preliminary flash and the main flash energy level as shown in Fig. 6);

b) means for grabbing (Figs. 3 and 4, the elements 2, 13, 34 and 31) a first image of a subject located a distance from said camera to create first image intensity data (i.e., as shown in Figs. 4 and 5A-5C that the image of the object from a distance is captured and detected by optical pickup 2 of the camera and processed by the light metering circuit 13 with the use of the control CPU 31 to create the brightness of the first image data; see col. 4, lines 15+);

c) means for analyzing (i.e., Fig. 4, the elements 13, 34 and 31) said first image intensity data to determine a first degree of exposure, wherein the analyzing does not require knowledge of said distance (i.e., noted that the intensity value reflected from the object is mainly analyzed by the metering device 13 with the use of CPU 31 and the exposure circuit 34; col. 4, lines 45+);

d) means for scaling (i.e., Figs. 2A-2B and 4, the elements 102, 104, 202, 31 and 35) said first flash energy to determine a final flash energy (i.e., see Figs. 5A-5C, col. 4, lines 35+ and col. 5, lines 5+); and

e) means for activating said flash (i.e., Figs. 2, 5A-5C, & 6; noted the Main flash) at said final flash energy (i.e., Fig. 6) level for taking a picture (i.e., col. 5, lines 10+ and col. 6, lines 5+); wherein the apparatus (Figs. 2 and 4) is integrated with the camera (Fig. 2, the element 1) and operates automatically each time the camera takes a flash picture (i.e., as shown in Fig. 5A-5C, the flash unit of the camera operates automatically every time the camera takes a picture with the use of Automatic Exposure unit).

Moreover, it is noted that Takagi '397 does not explicitly stated the use of a flash apparatus with "a digital camera", however, using a flash apparatus with a digital camera is notoriously well known in the art as evidenced by Koshiishi '856 (i.e., see Fig. 1 and 5 of Koshiishi '856). In particular, Koshiishi '856 discloses the use of a flash apparatus (11) operable

each time a flash picture is taken with the digital camera (Figs. 1, 5 and 6) and the flash apparatus (11) is integrated with the digital camera and operates automatically (i.e., see col. 7, lines 60+) each time the digital camera takes a picture (i.e., see Figs. 5 and 6).

In view of the above, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Takagi '397 as taught by Koshiishi '856, since Koshiishi '856 suggests at col. 2, lines 10+ that such a modification would made the camera compact and provide a reliable exposure when a movie frame picture image is recorded.

Regarding claim 29, it is noted that the method claim 29 is corresponding to the apparatus claim 31 as discussed above, thus, claim 29 is rejected for the same reasons as discussed above.

9. Claims 29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al. (U.S. 5,950,023) in view of Koshiishi '856.

Regarding claim 31, Hara '023 discloses a flash apparatus (Figs. 23-25, the element 40) an operable each time a flash picture is taken with a camera (i.e., noted the camera 30), the apparatus comprising:

a) means for activating a flash (i.e., Fig. 23, the element 1 and 40) with a first energy lower than the energy normally required for an acceptable final flash energy level (i.e., noted the pre-light emissions as shown in Figs. 25 and 36; see col. 19, lines 50+);

b) means for grabbing (Figs. 23, the elements 4, 6, 8 and 1) a first image of a subject located a distance from said camera (30) to create first image intensity data (i.e., as shown in Fig. 4 and 23 that the image of the object from a distance is captured and detected by optical pickup 4

of the camera 30 and processed by the light metering circuits 4 and 6 with the use of the control CPU 1 to create the brightness of the first image data; see col. 20, lines 15+ and col. 21, lines 20+);

c) means for analyzing (i.e., Fig. 23, the elements 1, 4 and 6) said first image intensity data to determine a first degree of exposure, wherein the analyzing does not require knowledge of said distance (i.e., noted that the intensity value reflected from the object is mainly analyzed by the device 4 with the use of CPU 31 and the exposure circuit 34; see Figs. 23 and 25; col. 21, lines 20+);

d) means for scaling (i.e., Figs. 23-25, the elements 1, 4 and 6) said first flash energy to determine a final flash energy (i.e., see Fig. 25, col. 21, lines 20+ and col. 22, lines 4+); and

e) means for activating said flash (i.e., Fig. 23 & 25; noted the Main flash is activated by the CPU 1) at said final flash energy level for taking a picture (i.e., Figs. 25; col. 19, lines 10+ and col. 22, lines 2+); wherein the apparatus (Figs. 23) is integrated with the camera (30) and operates automatically each time the camera takes a flash picture (i.e., as shown in Fig. 25, the flash unit of the camera operates automatically every time the camera takes a picture; see col. 23, lines 30+).

Moreover, it is noted that Hara '023 does not explicitly stated the use of a flash apparatus with "a digital camera", however, using a flash apparatus with a digital camera is notoriously well known in the art as evidenced by Koshiishi '856 (i.e., see Fig. 1 and 5 of Koshiishi '856). In particular, Koshiishi '856 discloses the use of a flash apparatus (11) operable each time a flash picture is taken with the digital camera (Figs. 1, 5 and 6) and the flash apparatus (11) is

integrated with the digital camera and operates automatically (i.e., see col. 7, lines 60+) each time the digital camera takes a picture (i.e., see Figs. 5 and 6).

In view of the above, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Hara '023 as taught by Koshiishi '856, since Koshiishi '856 suggests at col. 2, lines 10+ that such a modification would made the camera compact and provide a reliable exposure when a movie frame picture image is recorded.

Regarding claim 29, it is noted that the method claim 29 is corresponding to the apparatus claim 31 as discussed above, thus, claim 29 is rejected for the same reasons as discussed above.

10. Claims 28, 2-6, 13, 29, 16, 30,18-21 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al. (U.S. 5,371,568) in view of Koshiishi '856.

Regarding claim 28, Takagi '568 discloses a flash method (Figs. 1, 3, 4 and 5A-5B) operable each time a flash picture is taken with a camera (1), said method comprising performing the following steps with the camera (1) each time the camera takes a flash picture (i.e. noted an automatic flash; see col. 3, lines 35+):

a) activating a flash with a flash energy lower (i.e., noted the preliminary flashing as shown in Figs. 5A-5B, & 6-8; see col. 17, lines 40-45) than the energy normally required for a acceptable final flash energy (i.e., Main flash as shown in Figs. 5A-5B) level for achieving a correct exposure (i.e., col. 5, lines 60 – col. 6, lines 65 and col. 17, lines 15+);

b) grabbing an image of a subject located a distance from said camera to create image intensity data (i.e., as shown in Fig. 1, 3 and 5A-5B that the image of the object from a distance

is captured and detected by optical pickup 2 of the camera 1 and processed by the light metering circuits 13/8 with the use of the control CPU 31 to create the brightness of the first image data; see col. 3, lines 50+, col. 4, lines 4+ and col. 7, lines 30+);

c) analyzing said image intensity data to determine a flash degree of exposure, wherein the analyzing does not require knowledge of said distance (i.e., noted from Figs. 5B and 12 that the flash limiting level of exposure is determined by analyzing the image intensity data form the photometry areas; see col. 11, lines 20+ and col. 12, lines 10+);

d) calculating a subsequent flash energy level to achieve a corrected degree of exposure (i.e., Figs. 5B, 7-8, 11-13; col. 6, lines 45+, col. 9, lines 65+, col. 10, lines 5+, col. 12, lines 10+);

e) repeating steps (a) through (d) until the acceptable final flash energy level for achieving a correct exposure is determined (i.e., noted from Figs. 6 and 7 that the preliminary flashing process is repeated until the acceptable flash level for the correct exposure is achieved; see col. 7, lines 35+ - col. 8, lines 50+); and

f) activating a flash at the determined acceptable final flash energy; wherein each of steps (a) through (f) is performed automatically each time the camera takes a flash picture (i.e., noted that all the steps shown in Figs. 5A-5B are automatically performed when an automatic flash function is applied in the camera; see col. 3, lines 35+ and col. 13, lines 40+).

Moreover, it is noted that Takagi '568 does not explicitly stated the use of a flash apparatus and method with "a digital camera", however, using a flash apparatus with a digital camera is notoriously well known in the art as evidenced by Koshiishi '856 for performing the flashing method each time a flash picture is taken with the digital camera (i.e., see Fig. 1 and 5 of Koshiishi '856). In particular, Koshiishi '856 discloses the use of a flash apparatus (11) operable

each time a flash picture is taken with the digital camera (Figs. 1, 5 and 6) and the flash apparatus (11) is integrated with the digital camera and operates automatically (i.e., see col. 7, lines 60+) each time the digital camera takes a picture (i.e., see Figs. 5 and 6).

In view of the above, having the system of Takagi '568 and then given the well-established teaching of Koshiishi '856, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Takagi '568 as taught by Koshiishi '856, since Koshiishi '856 suggests at col. 2, lines 10+ that such a modification would made the camera compact and provide a reliable exposure when a movie frame picture image is recorded.

Regarding claim 2, the combination of Takagi '568 and Koshiishi '856 discloses a step prior to step (a) consisting of determining by analysis of ambient light (i.e., noted the use of elements 13 of Koshiishi '856; and the elements 8 of Takagi '568) or user election whether a flash is needed (i.e., noted that the control CPU 31 of Takagi '568 is capable of determining whether the flash is needed based on the user selection from the switch 101 as shown in Fig. 16 of Takagi '568).

Regarding claim 3, the combination of Takagi '568 and Koshiishi '856 discloses wherein said calculating includes multiplying the energy level of said flash by a pre-set constant factor if said flash degree of exposure is severely under exposed or severely over exposed (i.e., as shown in Fig. 12 of Takagi '568, the flash energy level 'LV' is multiplied by a pre-set constant factor based on the exposure condition detected; see col. 10, lines 50+, col. 11, lines 30+, and col. 12, lines 35+).

Regarding claim 4, the combination of Takagi '568 and Koshiishi '856 discloses wherein said calculating further includes:

a) setting said subsequent flash energy level at the maximum flash energy level for a final flash energy level if two or more consecutive flash degrees of exposure are severely under exposed (i.e., as shown in Figs. 12 of Takagi '568, the flash level "LV" is set to the maximum level at step S706 to prevent the main object from being under-exposed when, for example, the reflectivity distributions R(n) is determined to be low; see col. 10, lines 45+ and col. 12, lines 20+); and

b) setting said subsequent flash energy level at a minimum flash energy level for a final flash energy level if two or more consecutive flash degrees of exposure are severely over exposed (i.e., as shown in Figs. 12 of Takagi '568, the flash level "LV" is set to the minimum level at step S705 to prevent the main object from being over-exposed when, for example, the reflectivity distributions R(n) is determined to be High; see col. 11, lines 30+ and col. 12, lines 20+).

Regarding claim 5, the combination of Takagi '568 and Koshiishi '856 discloses wherein said activating a flash with a flash energy includes:

a) detecting an initial voltage of a flash capacitor (i.e., noted from Figs. 3 and 16, the control CPU 31 and the flash control unit 36 must detect an initial voltage of the flash capacitor as shown in Fig. 16 before generating a flash signal; see col. 15, lines 20+, col. 17, lines 15+ of Takagi '568);

b) calculating a cutoff voltage of said flash capacitor at which voltage a quantity of energy equal to said flash energy is transferred to power said flash (noted that CPU of the camera

is capable of calculating a proper cutoff voltage of the flash capacitor in such a manner that the quantity of flashing is sufficient; see col. 17, lines 35+ and col. 18, lines 5+ of Takagi '568); and

c) transferring a quantity of energy equal to send flash energy to said flash (i.e., see col. 18, lines 5+, col. 19, lines 15+ of Takagi '568).

Regarding claim 6, the combination of Takagi '568 and Koshiishi '856 discloses wherein said analyzing includes:

a) sampling a first quantity of data from a first area of said image (i.e., noted from Figs. 3, 13, 14 and 15, the image data from the first light receiving areas such as PD2-PD5; see col. 15, lines 5+ and col. 18, lines 30+ of Takagi '568); and

b) sampling a second quantity of data from a second area of said image (i.e., noted from Figs. 3, 13, 14 and 15, the image data from the first light receiving areas such as PD2-PD5; see col. 15, lines 5+ and col. 18, lines 30+ of Takagi '568).

Regarding claim 13, the combination of Takagi '568 and Koshiishi '856 discloses wherein said calculating further includes:

a) setting said subsequent flash energy level at the maximum flash energy level for a final flash energy level if two or more consecutive flash degrees of exposure are severely under exposed (i.e., as shown in Figs. 12 of Takagi '568, the flash level "LV" is set to the maximum level at step S706 to prevent the main object from being under-exposed when, for example, the reflectivity distributions R(n) is determined to be low; see col. 10, lines 45+ and col. 12, lines 20+); and

b) setting said subsequent flash energy level at a minimum flash energy level for a final flash energy level if two or more consecutive flash degrees of exposure are severely over

exposed (i.e., as shown in Figs. 12 of Takagi '568, the flash level "LV" is set to the minimum level at step S705 to prevent the main object from being over-exposed when, for example, the reflectivity distributions R(n) is determined to be High; see col. 11, lines 30+ and col. 12, lines 20+).

Regarding claim 29, Takagi '568 discloses a flash method (Figs. 1, 3, 4 and 5A-5B) operable each time a flash picture is taken with a camera (1), said method comprising performing the following steps with the camera (1) each time the camera takes a flash picture (i.e. noted an automatic flash; see col. 3, lines 35+):

a) activating a flash with a flash energy lower (i.e., noted the preliminary flashing as shown in Figs. 5A-5B, & 6-8; see col. 17, lines 40-45) than the energy normally required for a acceptable final flash energy (i.e., Main flash as shown in Figs. 5A-5B) level for achieving a correct exposure (i.e., col. 5, lines 60 – col. 6, lines 65 and col. 17, lines 15+);

b) grabbing an image of a subject located a distance from said camera to create image intensity data (i.e., as shown in Fig. 1, 3 and 5A-5B that the image of the object from a distance is captured and detected by optical pickup 2 of the camera 1 and processed by the light metering circuits 13/8 with the use of the control CPU 31 to create the brightness of the first image data; see col. 3, lines 50+, col. 4, lines 4+ and col. 7, lines 30+);

c) analyzing said image intensity data to determine a flash degree of exposure, wherein the analyzing does not require knowledge of said distance (i.e., noted from Figs. 5B and 12 that the flash limiting level of exposure is determined by analyzing the image intensity data form the photometry areas; see col. 11, lines 20+ and col. 12, lines 10+);

d) scaling a subsequent flash energy level to achieve a corrected degree of exposure (i.e., Figs. 5B, 7-8, 11-13; col. 6, lines 45+, col. 9, lines 65+, col. 10, lines 5+, col. 12, lines 10+); and

e) activating a flash at the determined acceptable final flash energy; wherein each of steps (a) through (e) is performed automatically each time the camera takes a flash picture (i.e., noted that all the steps shown in Figs. 5A-5B are automatically performed when an automatic flash function is applied in the camera; see col. 3, lines 35+ and col. 13, lines 40+).

Moreover, it is noted that Takagi '568 does not explicitly stated the use of a flash apparatus and method with "a digital camera", however, using a flash apparatus with a digital camera is notoriously well known in the art as evidenced by Koshiishi '856 for performing the flashing method each time a flash picture is taken with the digital camera (i.e., see Fig. 1 and 5 of Koshiishi '856). In particular, Koshiishi '856 discloses the use of a flash apparatus (11) operable each time a flash picture is taken with the digital camera (Figs. 1, 5 and 6) and the flash apparatus (11) is integrated with the digital camera and operates automatically (i.e., see col. 7, lines 60+) each time the digital camera takes a picture (i.e., see Figs. 5 and 6).

In view of the above, having the system of Takagi '568 and then given the well-established teaching of Koshiishi '856, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Takagi '568 as taught by Koshiishi '856, since Koshiishi '856 suggests at col. 2, lines 10+ that such a modification would made the camera compact and provide a reliable exposure when a movie frame picture image is recorded.

Regarding claim 16, the combination of Takagi '568 and Koshiishi '856 further discloses the steps:

a) setting the final flash energy level equal to a maximum flash energy level if said second degree of exposure (i.e., noted that the second degree of exposure is calculated in steps S14-S15 as shown in Fig. 5B of Takagi '568) is severely under exposed (i.e., as shown in Figs. 12 of Takagi '568, the final flash level "LV" is set to the maximum level at step S706 to prevent the main object from being under-exposed when, for example, the reflectivity distributions R(n) is determined to be low; see col. 10, lines 45+ and col. 12, lines 20+); and

b) setting the final flash energy equal to a minimum flash energy level if the second degree of exposure (i.e., noted that the second degree of exposure is calculated in steps S14-S15 as shown in Fig. 5B of Takagi '568) is severely over exposed (i.e., as shown in Figs. 12 of Takagi '568, the flash level "LV" is set to the minimum level at step S705 to prevent the main object from being over-exposed when, for example, the reflectivity distributions R(n) is determined to be High; see col. 11, lines 30+ and col. 12, lines 20+ of Takagi '568).

Regarding claim 30, Takagi '568 discloses a flash apparatus (Figs. 1, 3, 4 and 5A-5B) operable each time a flash picture is taken with a camera (1), said method comprising performing the following steps with the camera (1) each time the camera takes a flash picture (i.e. noted an automatic flash; see col. 3, lines 35+):

a) mans for activating a flash with a flash energy lower (i.e., noted the preliminary flashing as shown in Figs. 5A-5B, & 6-8; see col. 17, lines 40-45) than the energy normally required for a acceptable final flash energy (i.e., Main flash as shown in Figs. 5A-5B) level for achieving a correct exposure (i.e., col. 5, lines 60 – col. 6, lines 65 and col. 17, lines 15+);

b) mans for grabbing an image of a subject located a distance from said camera to create image intensity data (i.e., as shown in Fig. 1, 3 and 5A-5B that the image of the object from a

distance is captured and detected by optical pickup 2 of the camera 1 and processed by the light metering circuits 13/8 with the use of the control CPU 31 to create the brightness of the first image data; see col. 3, lines 50+, col. 4, lines 4+ and col. 7, lines 30+);

c) means for analyzing said image intensity data to determine a flash degree of exposure, wherein the analyzing does not require knowledge of said distance (i.e., noted from Figs. 5B and 12 that the flash limiting level of exposure is determined by analyzing the image intensity data form the photometry areas; see col. 11, lines 20+ and col. 12, lines 10+);

d) means for calculating a subsequent flash energy level to achieve a corrected degree of exposure (i.e., Figs. 5B, 7-8, 11-13; col. 6, lines 45+, col. 9, lines 65+, col. 10, lines 5+, col. 12, lines 10+);

e) means for repeating steps (a) through (d) until the acceptable final flash energy level for achieving a correct exposure is determined (i.e., noted from Figs. 6 and 7 that the preliminary flashing process is repeated until the acceptable flash level for the correct exposure is achieved; see col. 7, lines 35+ - col. 8, lines 50+); and

f) means for activating a flash at the determined acceptable final flash energy; wherein each of steps (a) through (f) is performed automatically each time the camera takes a flash picture (i.e., noted that all the steps shown in Figs. 5A-5B are automatically performed when an automatic flash function is applied in the camera; see col. 3, lines 35+ and col. 13, lines 40+).

Moreover, it is noted that Takagi '568 does not explicitly stated the use of a flash apparatus and method with "a digital camera", however, using a flash apparatus with a digital camera is notoriously well known in the art as evidenced by Koshiishi '856 for performing the flashing each time a flash picture is taken with the digital camera (i.e., see Fig. 1 and 5 of

Koshiishi '856). In particular, Koshiishi '856 discloses the use of a flash apparatus (11) operable each time a flash picture is taken with the digital camera (Figs. 1, 5 and 6) and the flash apparatus (11) is integrated with the digital camera and operates automatically (i.e., see col. 7, lines 60+) each time the digital camera takes a picture (i.e., see Figs. 5 and 6).

In view of the above, having the system of Takagi '568 and then given the well-established teaching of Koshiishi '856, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Takagi '568 as taught by Koshiishi '856, since Koshiishi '856 suggests at col. 2, lines 10+ that such a modification would made the camera compact and provide a reliable exposure when a movie frame picture image is recorded.

Regarding claim 18, please see the Examiner's comment with respect to claim 2 as discussed above.

Regarding claim 19, please see the Examiner's comment with respect to claim 3 as discussed above.

Regarding claim 20, please see the Examiner's comment with respect to claim 5 as discussed above.

Regarding claim 21, please see the Examiner's comment with respect to claim 6 as discussed above.

Regarding claim 31, noted that claim 31 correspond to the method claim 29, thus, claim 31 is rejected for the same reasons as set forth for claim 29 as discussed above (i.e. please see the Examiner's comment with respect to claim 29).

Allowable Subject Matter

11. Claims 7-8, 11-12, 22 and 26-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Claim 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Yamamoto et al and Ota discloses a camera having a flash apparatus and exposure control unit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 703-306-3021. The examiner can normally be reached on Mon-Fri (9-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Aung S. Moe
Primary Examiner
Art Unit 2612

A. Moe
April 16, 2004